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Remarks

Applicant respectfully requests reconsideration of this application as amended. No claims have been amended, cancelled, or added. Claims 1-8 and 14 were previously canceled. Therefore, claims 9-13 and 15-75 are presented for examination.

35 U.S.C. §102(b) Rejection

Claims 70 and 72-75 stand rejected under 35 U.S.C. §102(b) as being unpatentable over Andersson et al. (U.S. Patent No. 6,339,399). It should be noted that the Office Action stated that claims 70 and 73-75 were rejected under 35 U.S.C. §102(b). However, the associated explanations covered claims 70 and 72-75, and applicant accordingly assumed the rejection encompassed those claims. Applicant submits that the present claims are patentable over Andersson.

Andersson discloses a system for calibrating the reception and transmission of an antenna array for use in a cellular communication system. The calibration of the reception of the antenna array is performed by injecting a single calibration signal into each of a number of receiving antenna sections, in parallel. The signals are collected after having passed receiving components that might have distorted the phase and amplitude. Correction factors are generated and applied to the received signals. (Andersson at Abstract.)

Claim 70 recites:

A method comprising:
receiving a burst on a traffic channel of an air-interface protocol; and
extracting from the received burst at least a calibration burst.

Applicant submits that Andersson does not disclose or suggest receiving a burst on a traffic channel of an air-interface protocol and extracting from the received burst at least a

calibration burst, as recited by claim 70. The Office Action asserts that Andersson discloses these features at Figure 6, column 4, lines 4-44, and column 9, line 21 through column 13, line 33. (Office Action mailed 8/24/06 at pgs. 2-3.) However, these cited portions of Andersson only disclose transmitting a single calibration signal. Nowhere in Andersson is it disclosed receiving a burst and then *extracting a calibration burst from this burst*. The burst of claim 70 includes more than just a single calibration signal – the burst is transmitting data as well as a calibration signal. Andersson does not disclose this combination of transmitting data and calibration on a particular element. Therefore, claim 70, as well as its dependent claims, is patentable over Andersson.

Independent claim 74 recites, in part, inserting a calibration signal into a traffic signal and transmitting the traffic signal on a traffic channel of an air-interface protocol. As discussed above, Andersson does not disclose or suggest such a feature. Therefore, claim 74, as well as its dependent claim, is patentable over Andersson for the reasons discussed above with respect to claim 70.

35 U.S.C. §103(a) Rejection

Claims 9-12 and 15-27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Andersson et al. in view of Ohgami (U.S. Patent No. 5,430,789). Applicant submits that the present claims are patentable of Andersson in view of Ohgami.

Ohgami discloses a cellular mobile base station that prevents the total service breakdown of a cell zone that is serviced by a particular frequency range of transceiver panels, due to failure of one of the transceiver power supply units. (Ohgami at col. 2, ll. 6-10.)

Claim 9 recites:

A communications device comprising:

a transmitter coupled to an antenna array, the antenna array comprising a plurality of antenna elements, the transmitter operable to transmit a calibration burst by:

transmitting a first waveform from a first antenna element of the plurality of antenna elements, the first waveform comprising a combined signal that is a combination of two or more signals; and

transmitting a second waveform from two or more antenna elements of the plurality of antenna elements, the second waveform comprising the two or more signals each transmitted from an antenna element of the two or more antenna elements corresponding to each signal.

Applicant submits that Andersson does not disclose or suggest transmitting a second waveform from two or more antenna elements of the plurality of antenna elements, the second waveform comprising the two or more signals each transmitted from an antenna element of the two or more antenna elements corresponding to each signal, as recited by claim 9. The Office Action acknowledges that "Andersson et al. do[es] not disclose...transmitting a second waveform from second antenna elements of the plurality of antenna elements." (Office Action at pg. 4.) However, it does cite Ohgami as disclosing this feature. (Id.)

Applicant further submits that Ohgami does not disclose or suggest the cited feature of claim 9. The Office Action cites column 2, lines 26-38 of Ohgami as disclosing this feature. (Id.) This cited portion of Ohgami discloses outputs of a first and third set of transceivers being combined and transmitted from a first antenna. (Ohgami at col. 2, ll. 26-28.) It further discloses outputs of a second and fourth set of transceivers being combined and transmitted from a second antenna. (Id. at ll. 32-43.)

First, nowhere in this cited portion of Ohgami is there disclosed transmitting a second waveform from two or more antenna elements. In Ohgami, the output from the first and third transceivers, as well as the output from the second and fourth transceivers, are each sent on

only one antenna. There is no disclosure or suggestion anywhere in Ohgami of a second waveform being sent on two or more antenna elements.

Second, nowhere in the cited portion of Ohgami is there disclosed the second waveform comprising two or more signals each transmitted from an antenna element of the two or more antenna elements corresponding to each signal, where the two or more signals were previously combined in a first waveform sent from a first antenna element. Although the Final Office Action states that Ohgami discloses this feature, applicant can find no disclosure or suggestion of such a relationship between the first and second waveforms where the same signals are being sent (e.g., in a combined form for the first waveform, and separately for the second waveform). Therefore, Ohgami does not disclose or suggest the cited feature of claim 1.

As neither Andersson nor Ohgami disclose or suggest transmitting a second waveform from two or more antenna elements of the plurality of antenna elements, the second waveform comprising the two or more signals each transmitted from an antenna element of the two or more antenna elements corresponding to each signal, any combination of Andersson and Ohgami also does not disclose or suggest such a feature. Therefore, claim 9, as well as its dependent claims, is patentable over Andersson in view of Ohgami.

Independent claims 17 and 22 also recite, in part, receiving a second waveform from two or more antenna elements of the plurality of antenna elements, the second waveform comprising the two or more signals each transmitted from an antenna element of the two or more antenna elements corresponding to each signal. As discussed above, Andersson in view of Ohgami do not disclose or suggest such a feature. Therefore, claims 17 and 22, as well as their respective dependent claims, are patentable over Andersson in view of Ohgami.

Claims 13 and 28-69 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Andersson et al. in view of Ohgami and further in view of Miya et al. (U.S. Pub No. 2003/0186725). It should be noted that the Office Action stated that only claim 13 was rejected under 35 U.S.C. §103 over Andresson in view of Ohgami and Miya. However, the associated explanations covered claims 13 and 28-69, and therefore applicant accordingly assumed the rejection encompassed those claims. Applicant submits that the present claims are patentable of Andersson in view of Ohgami and further in view of Miya.

Miya discloses a calibration system for an array antenna radio communication apparatus that is capable of accurately detecting the delay characteristics and amplitude characteristics at radio reception units. The calibration system accomplishes these goals by using a signal with the same bandwidth as that of a spectrum spread signal used for actual communications or as close to it as the calibration signal. (Miya at pg. 2, paragraph [0021].)

Claim 28 recites:

A communications device comprising:
a transmitter coupled to an antenna array, the antenna array comprising a plurality of antenna elements, the transmitter operable to:
transmit a first data signal and a first calibration signal from a first antenna element of the plurality of antenna elements; and
transmit a second data signal and a second calibration signal from at least one other antenna element in the plurality of elements.

Applicant submits that Andersson does not disclose or suggest a transmitter to transmit a first data signal and a first calibration signal from a first antenna element of the plurality of antenna elements, as recited by claim 28. The Office Action relies on Andersson to disclose transmitting only a first and second calibration signal. (Office Action at pg. 9.) However, claim 28 recites transmitting *both of a first calibration signal and data signal*. Applicant can

find nowhere in Andersson that discloses transmitting this combination of a calibration signal and data signal.

Similarly, the Office Action cites Ohgami to disclose transmitting only a first and second data signal. However, claim 28 recites transmitting *both of a first calibration signal and data signal*. Ohgami does not perform calibration at all. Applicant can find nowhere in Ohgami that discloses transmitting this combination of a calibration signal and data signal.

Even if Andersson and Ohgami are combined, the combination of these references does not teach or suggest the *combination* of what claim 28 recites, namely, transmitting data and calibration signal on a particular element. The Office Action does not rely on Miya for disclosing or suggesting the features of claim 28. Nor can applicant find any disclosure or suggestion anywhere in Miya of the cited feature of claim 28.

As none of Andersson, Ohgami, or Miya disclose or suggest a transmitter to transmit a first data signal and a first calibration signal from a first antenna element of the plurality of antenna elements, any combination of Andersson, Ohgami, and Miya also does not disclose or suggest such a feature. Therefore, claim 28, as well as its dependent claims, is patentable over Andersson in view of Ohgami and Miya.

Independent claims 47 and 58 recite, in part, transmitting or receiving a first data signal and a first calibration signal from an antenna element. As discussed above, Andersson in view of Ohgami and Miya do not disclose or suggest such a feature. Therefore, claims 47 and 58, as well as their respective dependent claims, are patentable over Andersson in view of Ohgami and Miya.

Claim 13 depends from claim 9 and necessarily includes all of its features. As discussed above, claim 9 is patentable over Andersson in view of Ohgami. Miya does not

remedy the defects of Andresson and Ohgami in light of claim 9. As a result, claim 13 is patentable over Andersson in view of Ohgami and Miya.

Claim 71 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Andersson et al. in view of Barratt et al. (U.S. Patent No. 5,592,490). It should be noted that the Office Action stated that claims 9-12 and 15-27 were rejected under 35 U.S.C. §103 over Andresson in view of Barrett. However, the associated explanations covered only claim 71, and therefore applicant accordingly assumed the rejection encompassed only that claim.

Applicant submits that claim 71 is patentable of Andersson in view of Barratt. Claim 71 depends from claim 70 and necessarily includes all of its features. As discussed above, claim 70 is patentable over Andersson. Barratt does not remedy the defects of Andresson in light of claim 70. As a result, claim 71 is patentable over Andersson in view of Barratt.

Applicant respectfully submits that the rejections have been overcome and that the claims are in condition for allowance. Accordingly, applicant respectfully requests the rejections be withdrawn and the claims be allowed.

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The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Applicant respectfully petitions for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension.

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

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